DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-000010
Date Inspected: 13-Nov-2006

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 800
OSM Departure Time: 1730
Location: Shanghai, China

CWI Name: Xie Ping

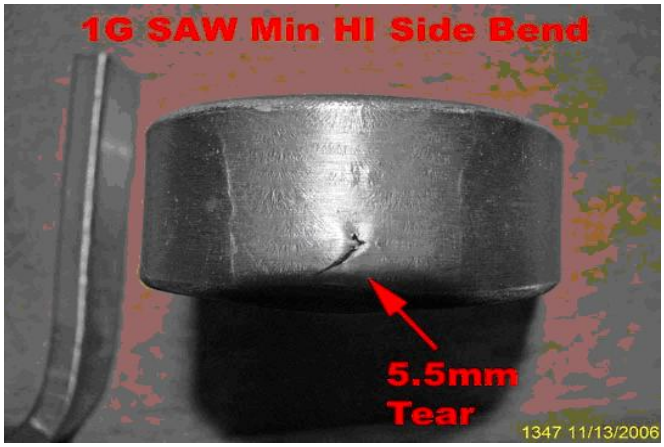
Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☐ Yes	☐ No	☑ N/A	**Weld Procedures Followed:**	☐ Yes	☐ No	☑ N/A
Approved Drawings:	☐ Yes	☑ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☐ No	☑ N/A
				Approved WPS:	☐ Yes	☐ No	☑ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: N/A

Summary of Items Observed:

Office of Structural Materials Quality Assurance Inspector (QA), David McClary observed quality control functions related to procedure qualification (PQR) testing at the ZPMC facility in Shanghai, Republic of China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Item	Description	WBS	Dwg No.	Status
1	The QA Inspector observed mechanical testing of the 1G (Flat) Submerged Arc Welding (SAW) Minimum Heat Input Procedure Qualification (PQR), identified as HP-2006102. One of the side bend specimen (specimen #10) failed due to a 5.5mm tear observed on the surface with no signs of slag or porosity. ZPMC plans to prepare two (2) additional side bend specimen out of the extra material for retest. All other tests appeared to comply with the contract documents.			



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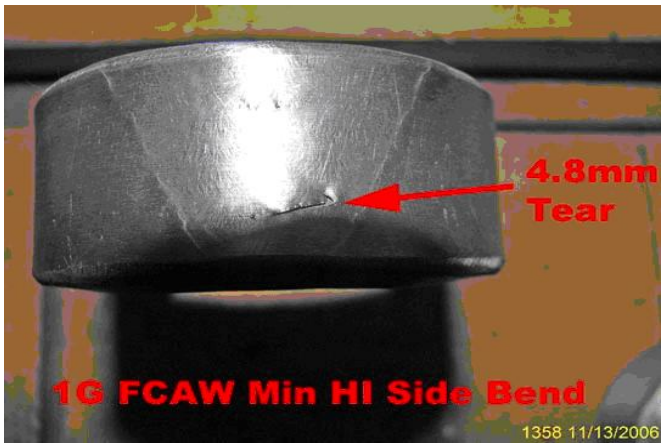
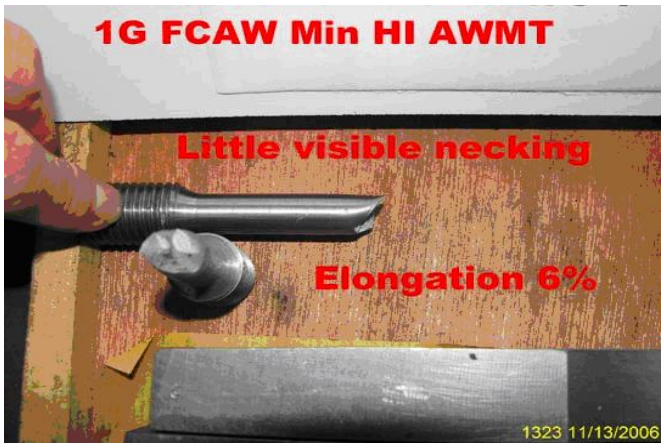
The QA Inspector observed retests on the Charpy-V Notch specimen for the 1G Flux Cored Arc Welding (FCAW) Maximum Heat Input PQR, identified as HP-2006103. The values for the five (5) samples were recorded by ZPMC?s Ms. Xie Ping at 36, 34, 86, 23 and 25 Joules at -30 degrees Celsius. All of the samples for a retest are required to meet a minimum of 34 Joules, after discarding the highest and lowest result. ZPMC intends to prepare more samples and test at the non-Fracture Critical (FCM) / Seismic Performance Critical (SPCM) Member temperature (-20 degrees Celsius).

The QA Inspector observed mechanical testing of the 1G FCAW Minimum Heat Input PQR, identified as HP-2006104. The All Weld Metal Tensile (AWMT) sample and one Side Bend Specimen do not appear to comply with the contract documents. The AWMT had an elongation of 6% (required 22% minimum). The one Side Bend Specimen had a 4.8mm long tear on the surface with no signs of slag or porosity. ZPMC plans to prepare two (2) additional samples AWMT and two (2) additional side bend specimen out of the extra material for re-test. All other tests appeared to comply with the contract documents.





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The QA Inspector observed ZPMC Quality Control Personnel identify the extra plate from PQR?s HP-2006102, HP-2006103 and HP-2006104 for machining of the additional re-test samples.

Summary of Conversations:

ZPMC Project Manager Mr. Chen Bin informed Caltrans that the Procedure Qualification (PQR) tests for non-standard joints against ceramic backing are suspended until mechanical testing of FCAW electrodes are complete. ZPMC is considering alternate FCAW electrodes for the ceramic backing and FCM (SPCM)

applications. ZPMC intends to prepare two sets of Charpy-V notch specimens for it Max and Min HI 3G FCAW PQRs currently being machined in order to test at both FCM and non-FCM impact requirements.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	McClary,David	Quality Assurance Inspector
Reviewed By:	Lowry,Patrick	QA Reviewer